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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,421	03/16/2004	Jong-Ho Kim	8729-233 (SS-19618-US)	2051

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EXAMINER	
GRIER, LAURA A	

ART UNIT	PAPER NUMBER
2644	

DATE MAILED: 12/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/801,421	KIM ET AL.	
	Examiner	Art Unit	
	Laura A Grier	2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,9-13,15-22,24-28,30-32 and 34-41* is/are rejected.

7)☒ Claim(s) *8,14,23,29,33 and 42* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 23-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Dependent claims 23–25 each recite a receiving step performed by an ultrasonic detector, a speaker used as a microphone, and a microphone, respectively. The claim language of the each claim is renders the claim indefinite because it is unclear to the examiner the difference between these receiving means and the sensor claimed in independent claim 16. The claim language of claims 23-25 does not provide an adequate relation to the receiving means in claim 18.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. **Claims 1-2, and 16-17** are rejected under 35 U.S.C. 102(e) as being anticipated by Kimura et al, U.S. Pub. No. 20030128850.

Regarding claims 1, 16, Kimura et al. (herein, Kimura) discloses a loudspeaker broadcasting system and loudspeaker broadcasting apparatus. Kimura's disclosure comprises an amplifier (371a...371d) coupled to a speaker (1a...1d), which reads on an amplifier and speakers, therein; sensor (381a...381d) which provides an input to the automatic sound volume adjuster (361a...361d), which indicates a sensor and controller, and sensor (3a...3d), which input into a controller (331), which reads a controller as well, wherein each sensor senses an environmental condition, therein; and compensation to the sensed signal in provided via the equalizers (351a...351d) – paragraphs 0022-0023, 0027, 0031-0032 – figure 1.

Regarding claims 2, 17, Kimura discloses everything claimed as applied above (see claim 1). Kimura inherently disclose a sensor for sensing one of temperature and humidity as evident of the fire detecting sensor.

6. **Claims 1, 16, 18-22, 25, 31, 36, and 38-40** are rejected under 35 U.S.C. 102(e) as being anticipated by Yoshino et al., U.S. Pub. No. 20020159602.

Regarding claims 1, and 16, Yoshino et al. (herein, Yoshino) discloses an automatic sound field correcting device. Yoshino's disclosure comprises an amplifier (5) and (9) coupled to a speaker (6), which reads on an amplifier and speakers therein; a microphone (8), which reads on a sensor, and a signal processing circuit (2), which reads on a controller, therein – figures 1-5, paragraphs 0042-0043, 0046 and 0048.

Regarding claim 18-19 and 27, Yoshino discloses everything claimed as applied above (see claim 16). Yoshino discloses further discloses the signal processing circuit and a measurement signal generator (3), which provides a pink noise signal, reads on a controller, and the functions the delay characteristics correcting unit (13) - (which is a part of the signal processing unit) inherently teaches the controller for determining the relative positions of the speakers, therein – figures 1-5, and 7, paragraphs 0042-0043, 0046, 0048, 0062, and 0065.

Regarding claim 31 and 40, Yoshino discloses an automatic sound field correcting device. Yoshino's disclosure comprises an amplifier (5) coupled to a speaker (6), which reads on an amplifier and speakers therein; and a signal processing circuit (2), wherein the signal processing circuit and a measurement signal generator (3), which provides a pink noise signal, reads on a controller, and the functions the delay characteristics correcting unit (13) - (which is a part of the signal processing unit) inherently teaches the controller for determining the relative positions of the speakers, therein – figures 1-5, and 7, paragraphs 0042-0043, 0046, 0048, 0062, and 0065.

Regarding claims 25 and 36, Yoshino discloses everything claimed as applied above (see claim 16 and 31, respectively). Yoshino discloses a microphone (8), which reads at least one sensor disposed proximal to at least one of speakers for sensing at least one environmental conditions, therein.

Regarding claims 20-21, and 22, 38 and 39, Yoshino discloses everything claimed as applied above (see claim 16 and 31, respectively). Yoshino discloses memory within the signal processing unit, wherein the collected data from the microphone is stored, such as memory 13c for the delay circuit (5C) and storing means for analyzing the speakers (0085); and wherein the

use of the sound correcting system is implemented via the computer (paragraph 0096), inherently indicates a the memory as one of a register, DRAM, and a flash memory.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. **Claim 3, 5-7, 9-13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshino in view of Pulfrey, U. S. Patent No. 5493620.

Regarding claims 3, 9-10, and 12, Yoshino discloses everything claimed as applied above (see claim 1). Yoshino further, the microphone (8) constitutes as detector as well and the sensed feedback information is used to determine position of the speakers based on a test signal generated via the signal processing circuit (2) and the measurement signal generator (3), which provides a pink noise signal - figures 1-5, and 7, paragraphs 0042-0043, 0046, 0048, 0062, and 0065. However, Yoshino fails to disclose the detector/sensor disposed in each the speaker(s). Providing a detector or sensor in each speaker was well known in the art as taught Pulfrey, which discloses a high fidelity sound reproducing system comprising a measuring transducer (which constitutes as a speaker used as microphone – claims 9 and 10) which may be positioned on a speaker, and the invention of Pulfrey further discloses that may be ultilized in more than one speaker among a plurality of speakers (col. 3, lines 44-52, and abstract).

Thus, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Yoshino by disposing a detector in each speaker for the purpose enhancing the performance and enabling efficient sound correction of all the individual speakers for optimal sound quality.

Regarding claim 4, Yoshino and Pulfrey disclose everything claimed as applied above (see claim 3). Yoshino's signal processing unit (2), of Yoshino and Pulfrey, reads on the controller generating compensation data for adjusting the play signal, therein – paragraphs 0046 – 0048, 0062.

Regarding claims 5-6, and 7, respectively, Yoshino and Pulfrey disclose everything claimed as applied above (see claim 4 and 5, respectively). Yoshino, of Yoshino and Pulfrey, discloses memory within the signal processing unit, wherein the collected data from the microphone is stored, such as memory 13c for the delay circuit (5C) and storing means for analyzing the speakers (0085); and wherein the use of the sound correcting system is implemented via the computer (paragraph 0096), inherently indicates a the memory as one of a register, DRAM, and a flash memory.

Regarding claim 11, Yoshino and Pulfrey disclose everything claimed as applied above (see claim 4 and 5, respectively). Yoshino, of Yoshino and Pulfrey, discloses an amplifier ((9) – figure 1) coupling to the input of the signal processing circuit (controller), which reads on the reported signal amplified by the amplifier prior the receipt the controller.

Regarding claim 13, it is rejected for the same reasons set forth in the rejection of claim 3.

9. **Claim 24** is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshino in view of Pulfrey.

Yoshino discloses everything claimed as applied above (see claim, respectively). However, Yoshino fails to disclose the speaker as a microphone. Pulfrey discloses a high fidelity sound reproducing system comprising a measuring transducer (which constitutes as a speaker used as microphone) – col. 3, lines 44-52.

Thus, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Yoshino by providing speaker used as microphone for the purpose of enabling of dual function transducer (which is a common practice in the art) and limiting the number of components and size of the structure.

10. **Claims 28, 32, 34-35 and 41** are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshino and Pulfrey.

Regarding claims 28, 32, 34-35, and 41, they are interpreted and rejected for the same reasons set forth in claims 3, 9, 10, and 12-13.

11. **Claims 15, 17, 30, and 36** are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshino and Pulfrey.

Yoshino discloses everything claimed as applied above (see claims 18, 31 and 36, respectively). However, Yoshino fails to disclose the detector/sensor detecting at least one of temperature and humidity. The examiner takes official notice such that detector or sensors were well known in the art.

Thus, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Yoshino by providing the a detector or sensor in a speaker for the purpose detecting the temperature of the speaker and/or speaker environment for the effectively controlling the physical functioning characteristics of the loudspeaker and provide efficient loudspeaker protection or prevention of a loudspeaker malfunction.

Claims 8, 14, 23, 29, 33, and 42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura A Grier whose telephone number is (703) 306-4819. The examiner can normally be reached on Monday - Friday, 7:30 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Isen can be reached on (703) 305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Laura A. Grier
December 6, 2004